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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/071,895	02/08/2002	Philip R. Laws	TD-164	8706

29106 7590 05/07/2004

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EXAMINER

JANKUS, ALMIS R

ART UNIT	PAPER NUMBER
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2671

DATE MAILED: 05/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/071,895

Applicant(s)

LAWS ET AL.

Examiner

Almis R Jankus

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-2 are presented for examination.

2. The material incorporated by reference at pages 16-17 is objected to because it is unreasonable to include practically all that has been disclosed about the subject of computer graphics, much of which may have no pertinence to applicant's invention. While an application may attempt to incorporate the content of another document or part thereof by reference, the information is as much a part of the application as filed as if the text was repeated in the application, and should be treated as part of the text of the application as filed.

Applicant is required to delete all references to material which has no direct pertinence to the instant invention.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Watt et al.

With respect to claim 1, Watt et al. teaches the claimed computing edge function values for at least one interior point within said patch, at pages 23-24, the edge function is the current scan line, the patch is the polygon shown at figure 1.23, the interior point is the point I_s , and the computing is shown at the top of page 24; and computing edge function values for multiple other points within said patch, using an arithmetic combination of said edge function values for said interior point, together with previously computed values of said edge functions for points on the border of said patch, together with a reduced set of offset vectors, at pages 23-24, where the multiple other points within said patch are the other pixels of the polygon, the arithmetic combination being taught at the first paragraph at page 24 with "for a current pixel, obtaining its value by adding it to the value of the previous pixel", and at formulae (1.2) at the top of page 24, the previously computed values of said edge functions for points on the border of said patch being points I_a and I_b at figure 1.23 at page 23, the reduced set of offset vectors being the intensity increment between pixels, "reduced set of offset" because the increment remains unchanged between the points on the border of the polygon along a current scan line, and "vectors" because the increment is the scalar increment of the

intensity magnitude along the scanning direction of the current scan line, a quantity having a magnitude and a direction being a vector.

With respect to claim 2, Watt et al. teaches the claimed computing the value of an edge function at an interior reference point within said patch, and at a boundary reference point on the edge of said patch, at pages 23-24 with the interior reference point and the boundary reference point being points I_s and I_a respectively, at figure 1.23; and assessing the value of said edge function at multiple other points within said patch, by comparing the value of said edge function at a respective reference point, which may be said interior reference point or said boundary reference point or a previously computed reference point, with the delta value of said edge function for a respective one of a reduced set of offset vectors, at pages 24-27 with the multiple other points within said patch being the other pixels within the polygon being shaded; assessing the value of the edge function by comparing the value of the edge function at a respective reference point with the delta value of the edge function corresponds to highlight detection, which is taught at pages 25-26. If a polygon is assessed as having no highlights, then the faster Gouraud shading with linear intensity interpolation (constant intensity delta between polygon edges on a scan line) is used. However, if the comparison tests, shown at pages 25-26, indicate a highlighted polygon, then Phong shading with non-linear intensity interpolation (linear normal vector interpolation) is used. The offset vectors (deltas) in case of Phong shading comprise a reduced set

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because they are evaluated only at every pixel; further, they do not include vectors which are complements or shifts of each other because the intensity deltas between polygon edges on a scan line are not constant, nor simple multiples, but vary non-linearly.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Almis R Jankus whose telephone number is 703-305-9795. The examiner can normally be reached on M-F, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman can be reached on 703-305-9798. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AJ



ALMIS R. JANKUS
PRIMARY EXAMINER